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Patent

Attorney Docket No.: PD-201018

Customer No.: 29158

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims, in which no

claim is canceled, currently amended, or newly presented.

1. (Original) A network apparatus for providing performance enhancements of a communication

network, comprising:

a plurality of communication interfaces configured to receive and to forward messages according

to a prescribed protocol;

a plurality of modules configured to process the messages to effect performance enhancing

functions; and

a plurality of buffers configured to store the received messages and messages that are generated

by one of the plurality of modules,

wherein a portion of the plurality of buffers is shared by the plurality of modules based upon

execution of a particular one of the performance enhancing functions, each of the plurality of buffers has a

data structure that includes an expandable header to accommodate different message types.

2. (Previously Presented) The network apparatus according to claim 1, wherein the plurality of

modules comprises a spoofing module configured to perform selective spoofing of one or more

connections within the communication network by adding information to or deleting information from the

messages to enhance performance of the communication network, a connection module configured to

multiplex the connections over a common backbone connection established over the communication

network, a prioritization module configured to prioritize the connections for access to the backbone

connection, and a path selection module configured to determine a path among a plurality of paths

supporting the connections over the communication network.

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3. (Original) The network apparatus according to claim 1, wherein the communication interface includes a local area network (LAN) interface, and a wide area network (WAN) interface, one of the plurality of buffers being designated as a LAN-to-WAN buffer that stores the receive messages in a LAN-to-WAN direction, another one of the plurality of buffers being designated as a WAN-to-LAN buffer that stores the receive messages in a WAN-to-LAN direction.

- 4. (Original) The network apparatus according to claim 3, wherein the WAN is satellite network.
- 5. (Original) The network apparatus according to claim 1, wherein the data structure of the plurality of buffers comprises:
 - a specific header field that stores platform specific information;
 - a common header field the stores information known to the plurality of modules;
 - a payload field;
 - an offset field that indicates start of the payload field; and
 - a header growth field that provides a variable header length.
- 6. (Original) The network apparatus according to claim 5, wherein the common header field comprises:
 - a flag field that specifies direction of message flow;
 - a connection handle field that specifies handle of a backbone connection; and
 - an owner specific field that stores an owner specific header.
- 7. (Original) The network apparatus according to claim 1, wherein the prescribed protocol is the Transmission Control Protocol (TCP).

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8. (Previously Amended) A method for providing performance enhancements by an endpoint

within a communication network, the method comprising:

receiving messages according to a prescribed protocol;

processing the messages to effect performance enhancing functions via a plurality of modules of

the endpoint; and

storing the received messages and messages that are generated by one of the plurality of

modules in a plurality of buffers of the endpoint,

wherein a portion of the plurality of buffers is shared by the plurality of modules based upon

execution of a particular one of the performance enhancing functions, each of the plurality of buffers has a

data structure that includes an expandable header to accommodate different message types.

9. (Previously Presented) The method according to claim 8, wherein the plurality of modules

comprises a spoofing module configured to perform selective spoofing of one or more connections within

the communication network by adding information to or deleting information from the messages to

enhance performance of the communication network, a connection module configured to multiplex the

connections over a common backbone connection established over the communication network, a

prioritization module configured to prioritize the connections for access to the backbone connection, and a

path selection module configured to determine a path among a plurality of paths supporting the

connections over the communication network.

10. (Original) The method according to claim 8, wherein the receiving step is performed by a

communication interface that includes at least one of a local area network (LAN) interface and a wide area

network (WAN) interface, one of the plurality of buffers being designated as a LAN-to-WAN buffer that

stores the receive messages in a LAN-to-WAN direction, another one of the plurality of buffers being

designated as a WAN-to-LAN buffer that stores the receive messages in a WAN-to-LAN direction.

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11. (Original) The method according to claim 10, wherein the WAN is satellite network.

12. (Original) The method according to claim 8, wherein the data structure of the plurality of

buffers comprises:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

13. (Original) The method according to claim 12, wherein the common header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.

14. (Original) The method according to claim 8, wherein the prescribed protocol in the receiving

step is the Transmission Control Protocol (TCP).

15. (Original) A network apparatus for providing performance enhancements of a communication

network, comprising:

means for receiving messages according to a prescribed protocol; and

means for processing the messages to effect performance enhancing functions, wherein the

received messages and messages that are generated by processing means are stored in a plurality of

buffers, a portion of the plurality of buffers being shared by the processing means based upon execution

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of a particular one of the performance enhancing functions, each of the plurality of buffers having a data

structure that includes an expandable header to accommodate different message types.

16. (Previously Presented) The network apparatus according to claim 15, wherein the processing

means comprises a spoofing module configured to perform selective spoofing of one or more connections

within the communication network by adding information to or deleting information from the messages to

enhance performance of the communication network, a connection module configured to multiplex the

connections over a common backbone connection established over the communication network, a

prioritization module configured to prioritize the connections for access to the backbone connection, and a

path selection module configured to determine a path among a plurality of paths supporting the

connections over the communication network.

17. (Original) The network apparatus according to claim 15, wherein the receiving means

includes at least one of a local area network (LAN) interface and a wide area network (WAN) interface,

one of the plurality of buffers being designated as a LAN-to-WAN buffer that stores the receive messages

in a LAN-to-WAN direction, another one of the plurality of buffers being designated as a WAN-to-LAN

buffer that stores the receive messages in a WAN-to-LAN direction.

18. (Original) The network apparatus according to claim 17, wherein the WAN is satellite

network.

19. (Original) The network apparatus according to claim 15, wherein the data structure of the

plurality of buffers comprises:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

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an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

20. (Original) The network apparatus according to claim 19, wherein the common header field

comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.

21. (Original) The network apparatus according to claim 15, wherein the prescribed protocol is

the Transmission Control Protocol (TCP).

22. (Previously Amended) A computer-readable medium carrying one or more sequences of one

or more instructions for providing performance enhancements by an endpoint within a communication

network, the one or more sequences of one or more instructions including instructions which, when

executed by one or more processors, cause the one or more processors to perform the steps of:

receiving messages according to a prescribed protocol;

processing the messages to effect performance enhancing functions via a plurality of modules of

the endpoint; and

storing the received messages and messages that are generated by one of the plurality of

modules in a plurality of buffers of the endpoint,

wherein a portion of the plurality of buffers is shared by the plurality of modules based upon

execution of a particular one of the performance enhancing functions, each of the plurality of buffers has a

data structure that includes an expandable header to accommodate different message types.

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23. (Previously Presented) The computer-readable medium according to claim 22, wherein the

plurality of modules comprises a spoofing module configured to perform selective spoofing of one or more

connections within the communication network by adding information to or deleting information from the

messages to enhance performance of the communication network, a connection module configured to

multiplex the connections over a common backbone connection established over the communication

network, a prioritization module configured to prioritize the connections for access to the backbone

connection, and a path selection module configured to determine a path among a plurality of paths

supporting the connections over the communication network.

24. (Original) The computer-readable medium according to claim 22, wherein the receiving step

is performed by a communication interface that includes at least one of a local area network (LAN)

interface and a wide area network (WAN) interface, one of the plurality of buffers being designated as a

LAN-to-WAN buffer that stores the receive messages in a LAN-to-WAN direction, another one of the

plurality of buffers being designated as a WAN-to-LAN buffer that stores the receive messages in a WAN-

to-LAN direction.

25. (Original) The computer-readable medium according to claim 24, wherein the WAN is

satellite network.

26. (Original) The computer-readable medium according to claim 22, wherein the data structure

of the plurality of buffers comprises:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

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27. (Original) The computer-readable medium according to claim 26, wherein the common

header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.

28. (Original) The computer-readable medium according to claim 22, wherein the prescribed

protocol in the receiving step is the Transmission Control Protocol (TCP).

29. (Previously Amended) A memory resident within an endpoint for storing information for

providing performance enhancements of a communication network, the memory comprising a data

structure including:

a specific header field that stores platform specific information;

a common header field the stores information known to a plurality of modules of the endpoint;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

30. (Original) The memory according to claim 29, wherein the common header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.